Fig.1.

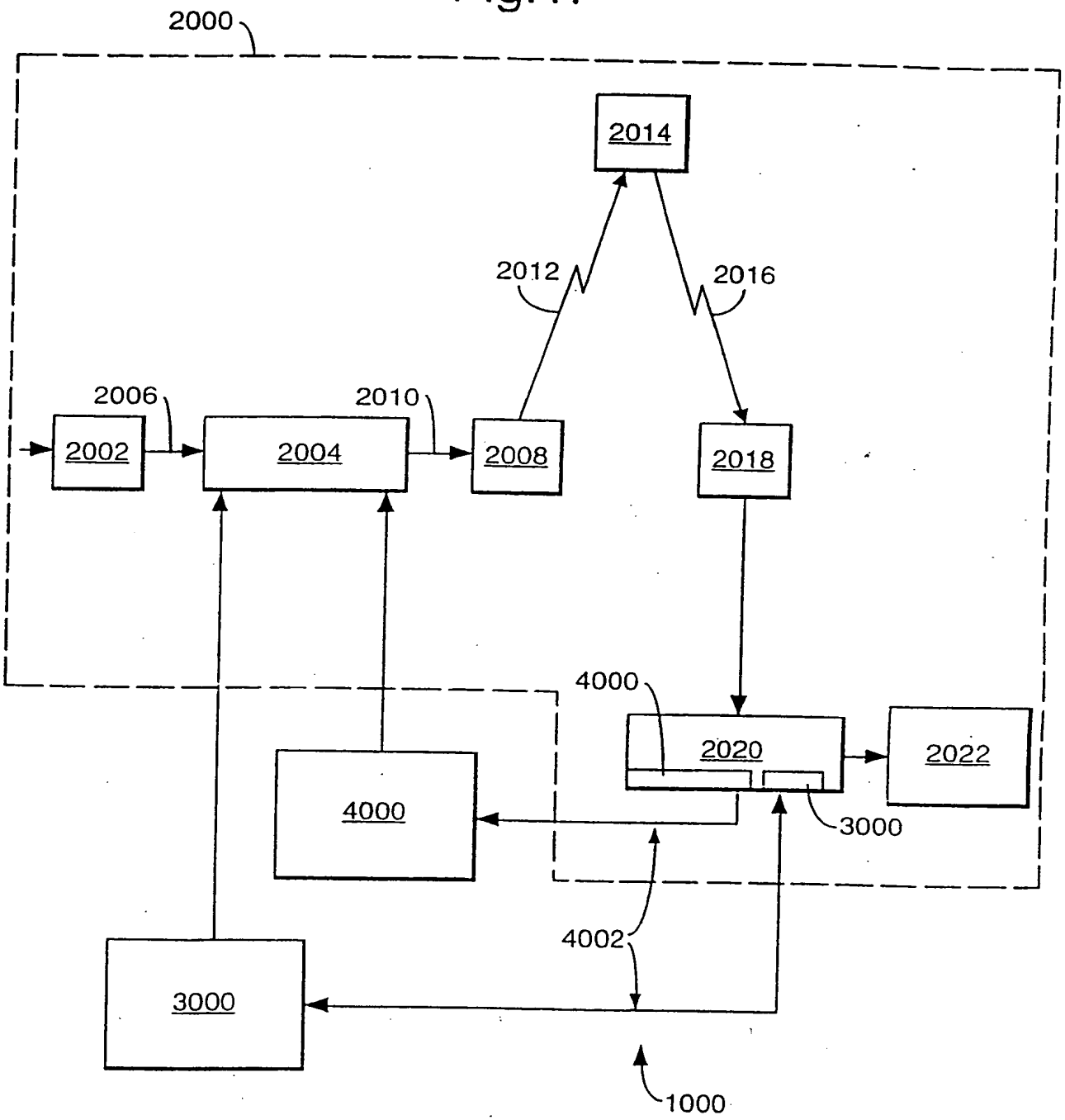

2000
2014
2012
2016
2006
2010
2002
2004
2008
2018
4000
2020
2022
4000
3000
4002
3000
1000

Fig.2.

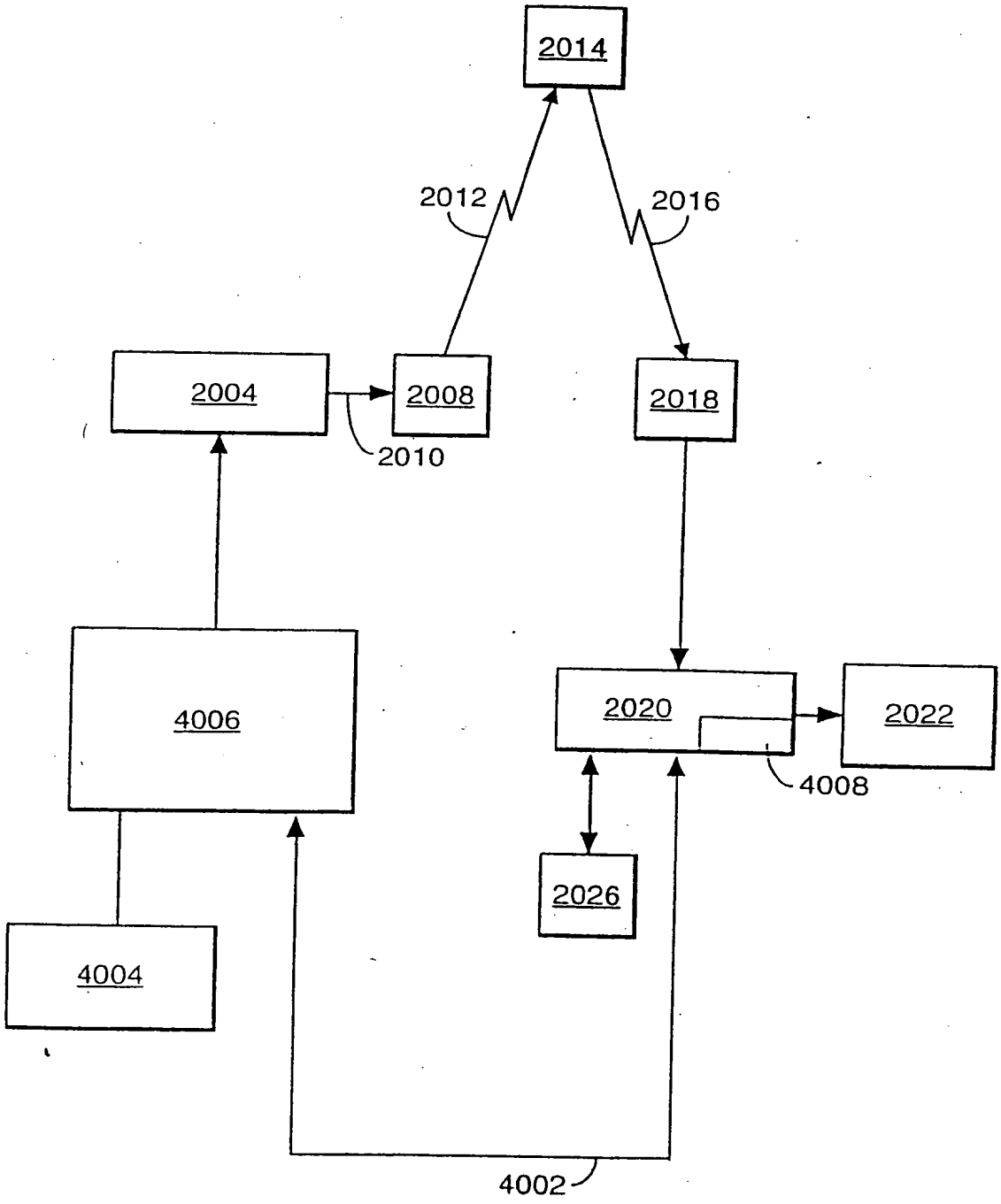

2014
2012
2016
2004
2008
2010
2018
4006
2020
2022
4008
2026
4004
4002

Fig.3.

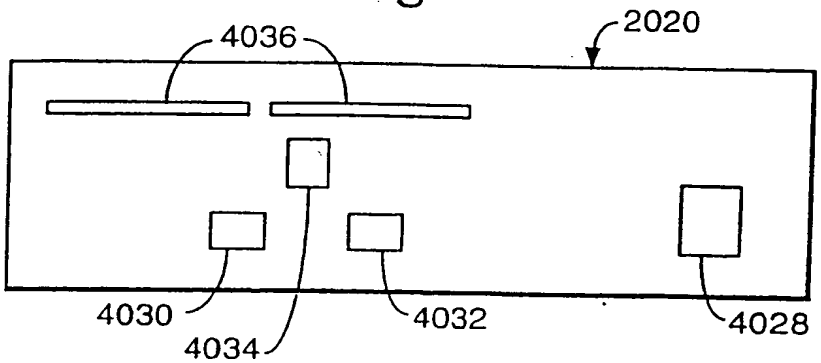

4036
2020
4030
4034
4032
4028

Fig.4.

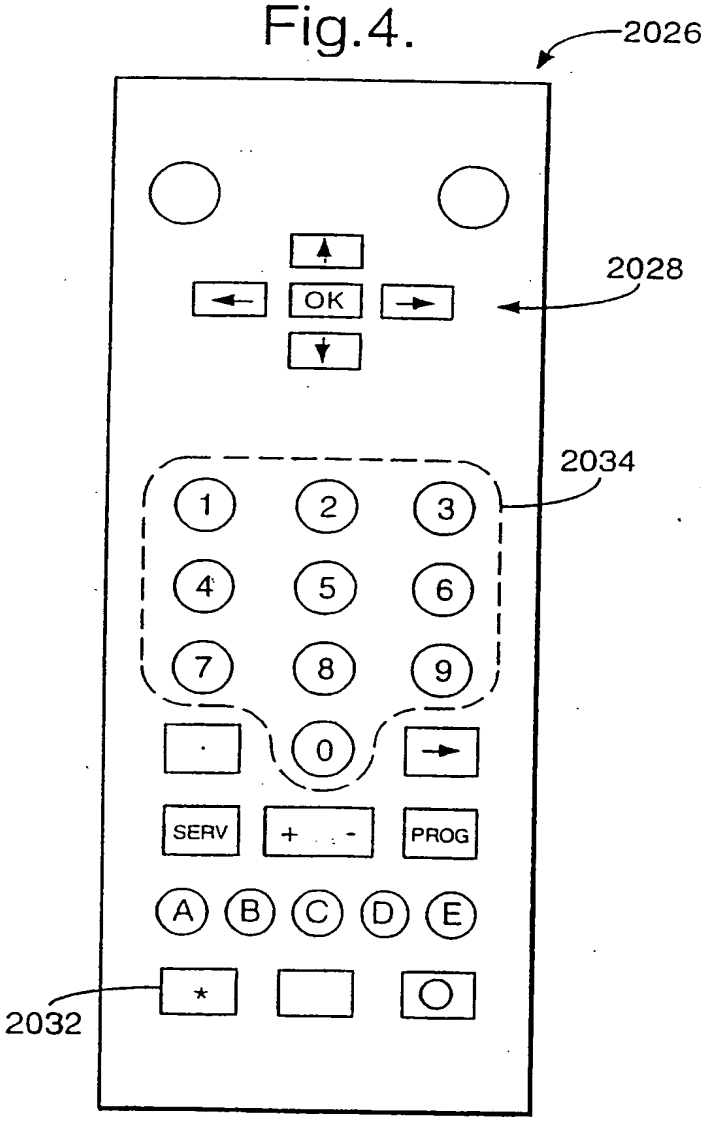

2026
OK
2028
2034
1
2
3
4
5
6
7
8
9
0
SERV
+
-
PROG
A
B
C
D
E
*
2032

Fig.5.

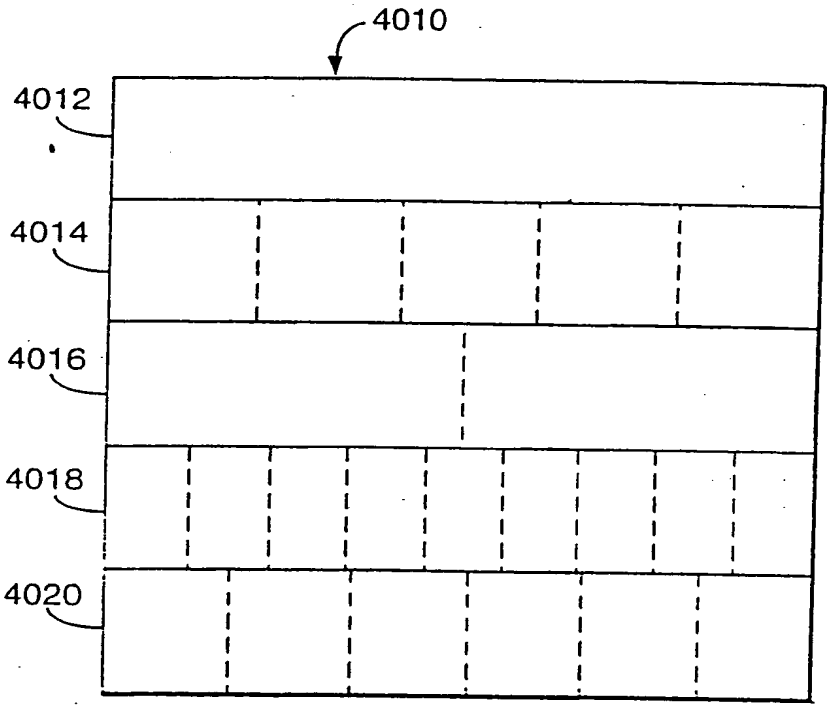


Fig.6.

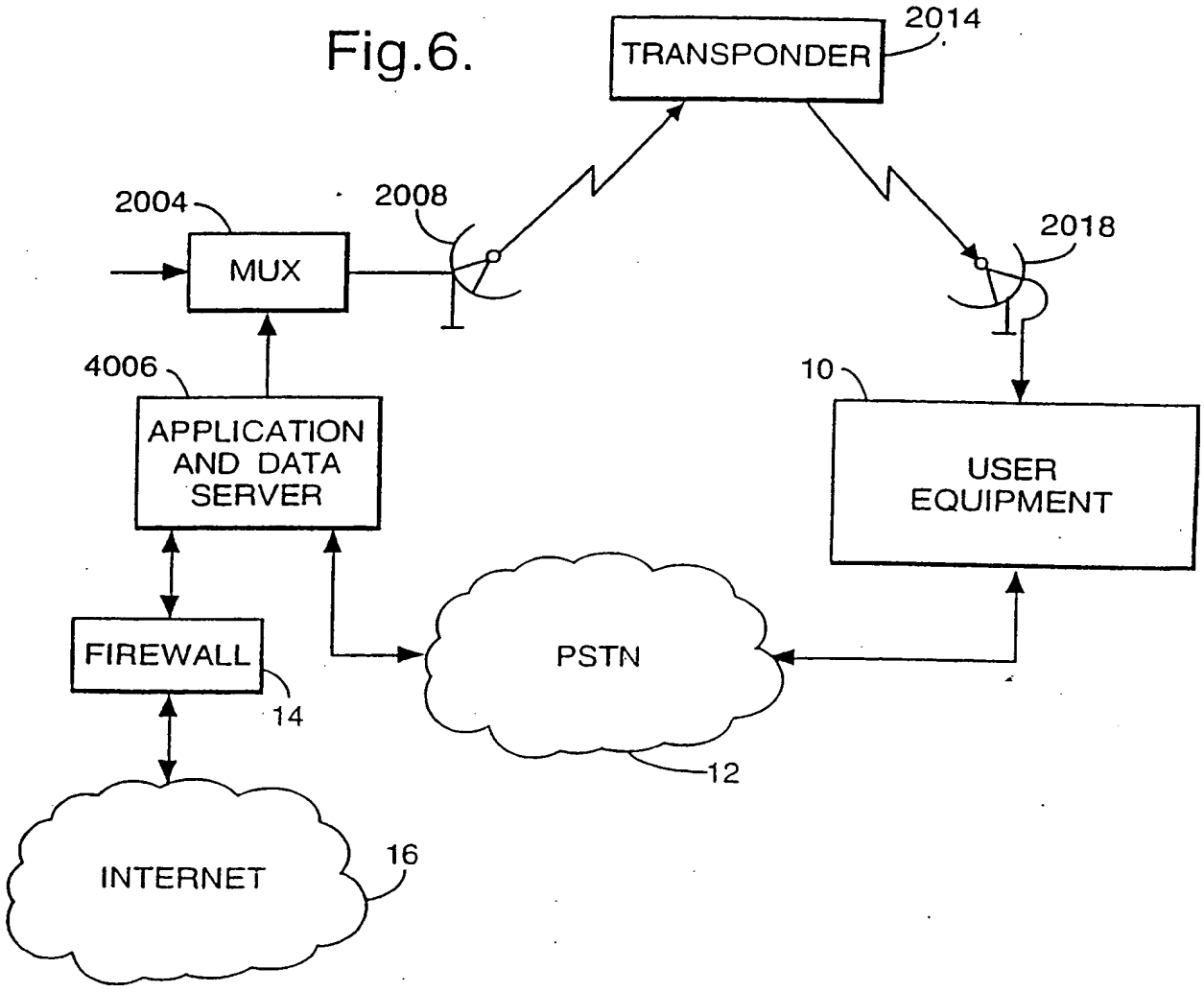

TRANSPONDER
2014
2004
2008
2018
MUX
4006
10
APPLICATION AND DATA SERVER
USER EQUIPMENT
FIREWALL
14
PSTN
12
INTERNET
16

Fig.7.

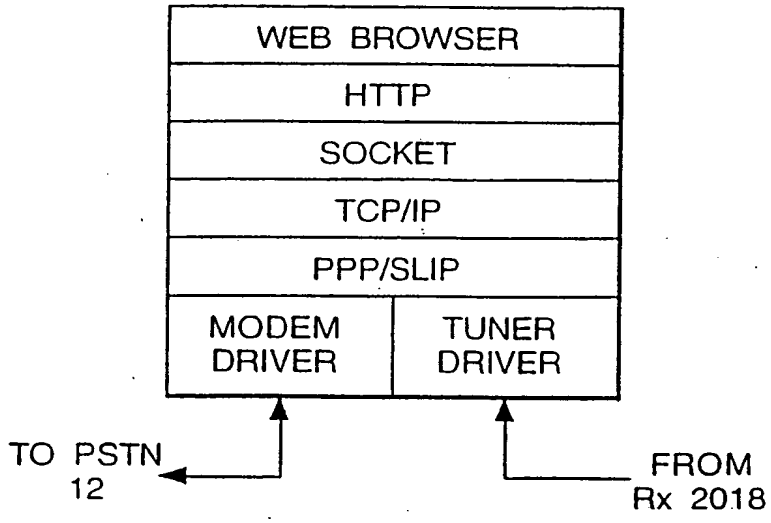

WEB BROWSER
HTTP
SOCKET
TCP/IP
PPP/SLIP
MODEM DRIVER
TUNER DRIVER
TO PSTN 12
FROM Rx 2018

Fig.8.

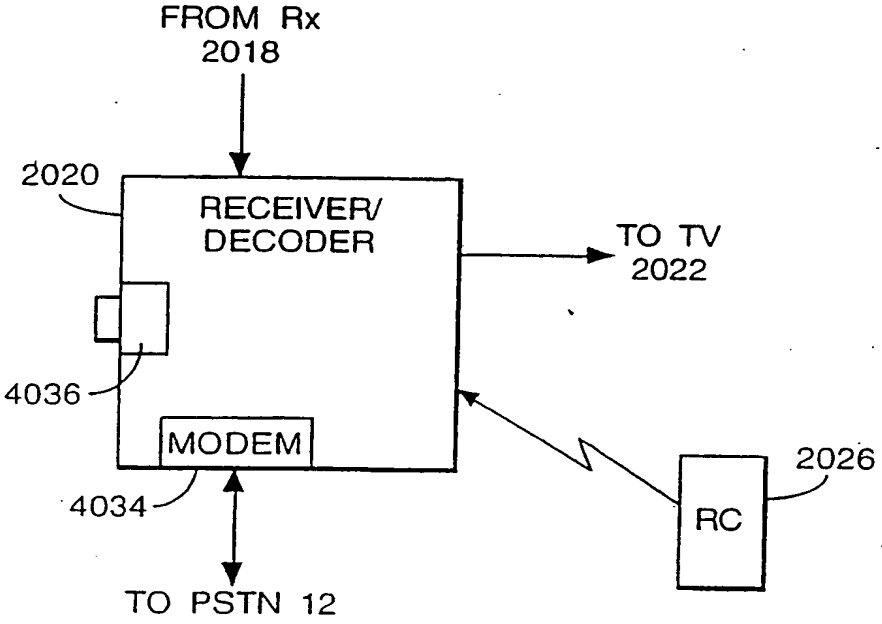

FROM Rx
2018
2020
RECEIVER/
DECODER
TO TV
2022
4036
MODEM
4034
2026
RC
TO PSTN 12

Fig.9.

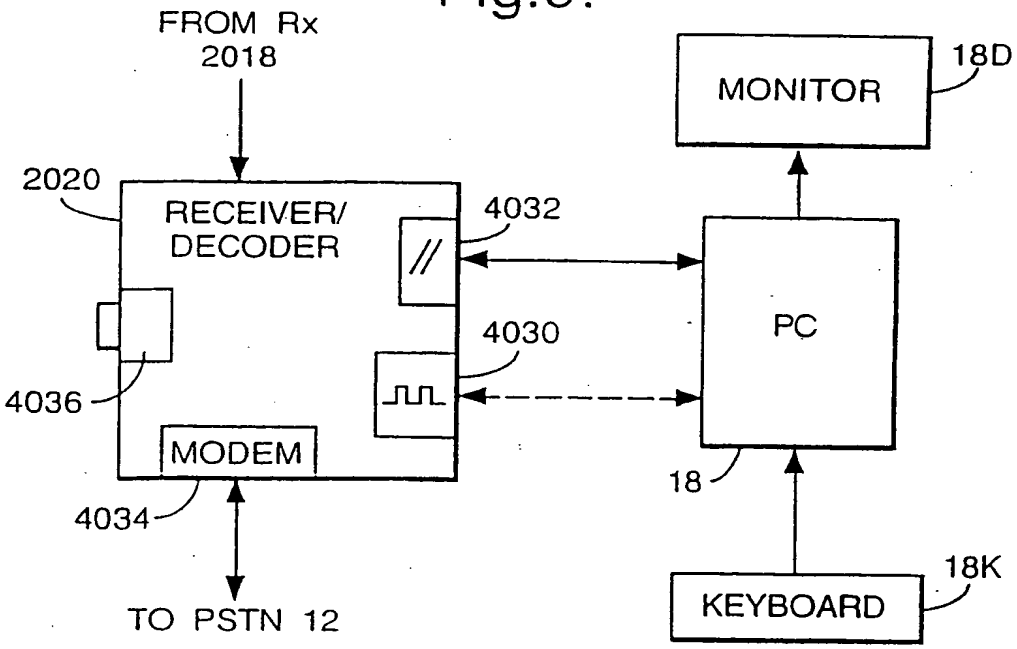

FROM Rx
2018
MONITOR
18D
2020
RECEIVER/
DECODER
4032
PC
4030
4036
MODEM
18
4034
18K
KEYBOARD
TO PSTN 12

Fig.10.

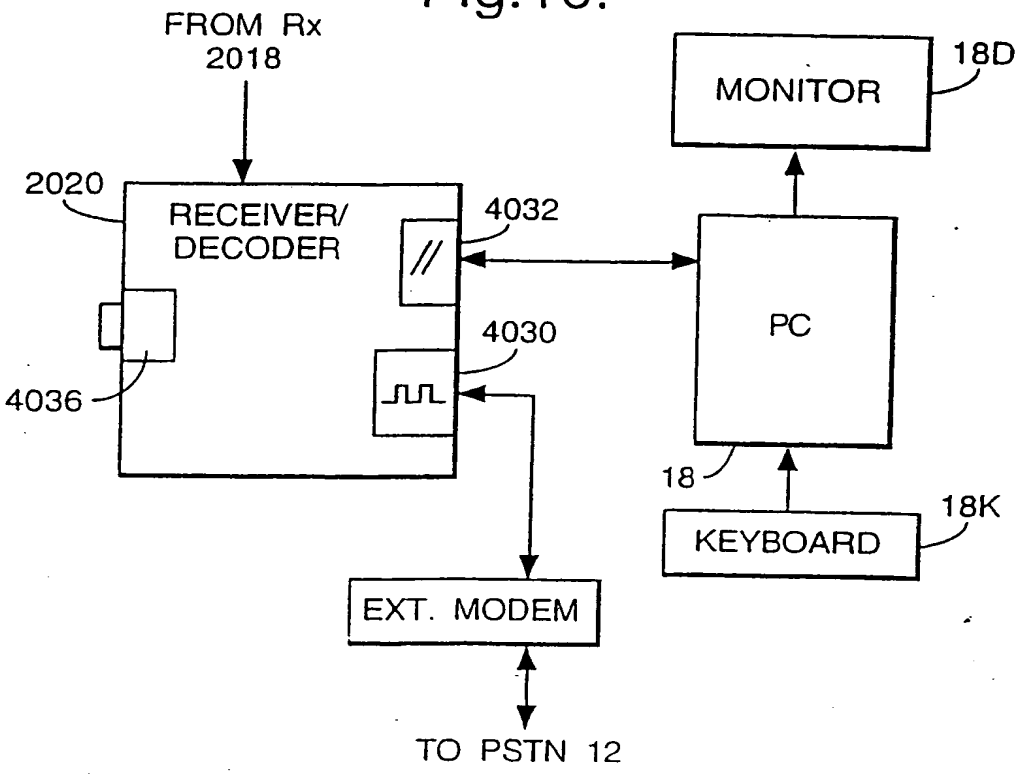

FROM Rx
2018
MONITOR
18D
2020
RECEIVER/
DECODER
4032
PC
4030
4036
18
KEYBOARD
18K
EXT. MODEM
TO PSTN 12

Fig.11.

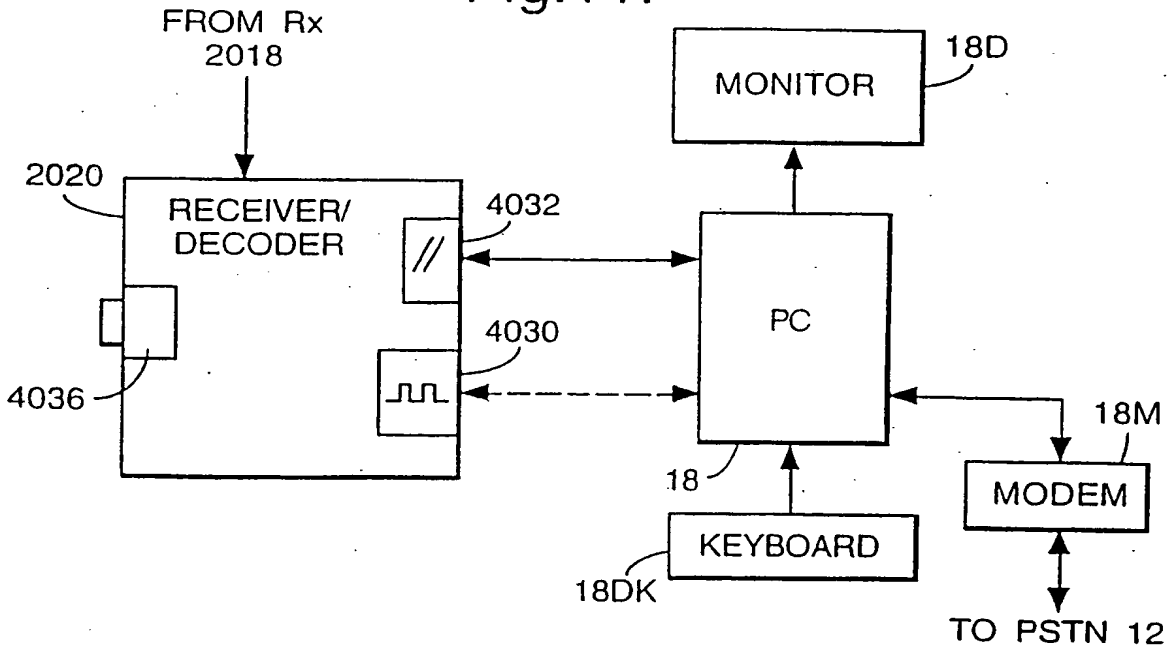

FROM Rx
2018
MONITOR
18D
2020
RECEIVER/
DECODER
4032
PC
4030
4036
18M
18
MODEM
KEYBOARD
18DK
TO PSTN 12

Fig.12.

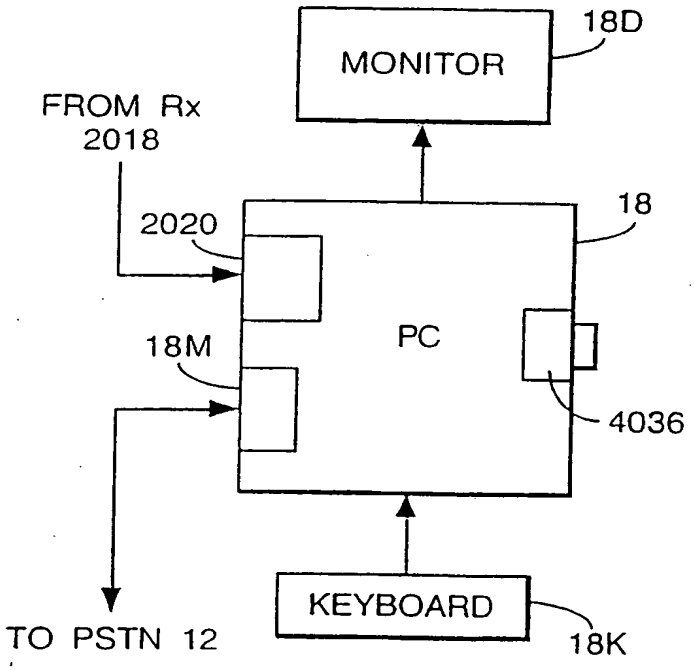

MONITOR
18D
FROM Rx
2018
2020
18
PC
18M
4036
KEYBOARD
18K
TO PSTN 12

Fig.13.

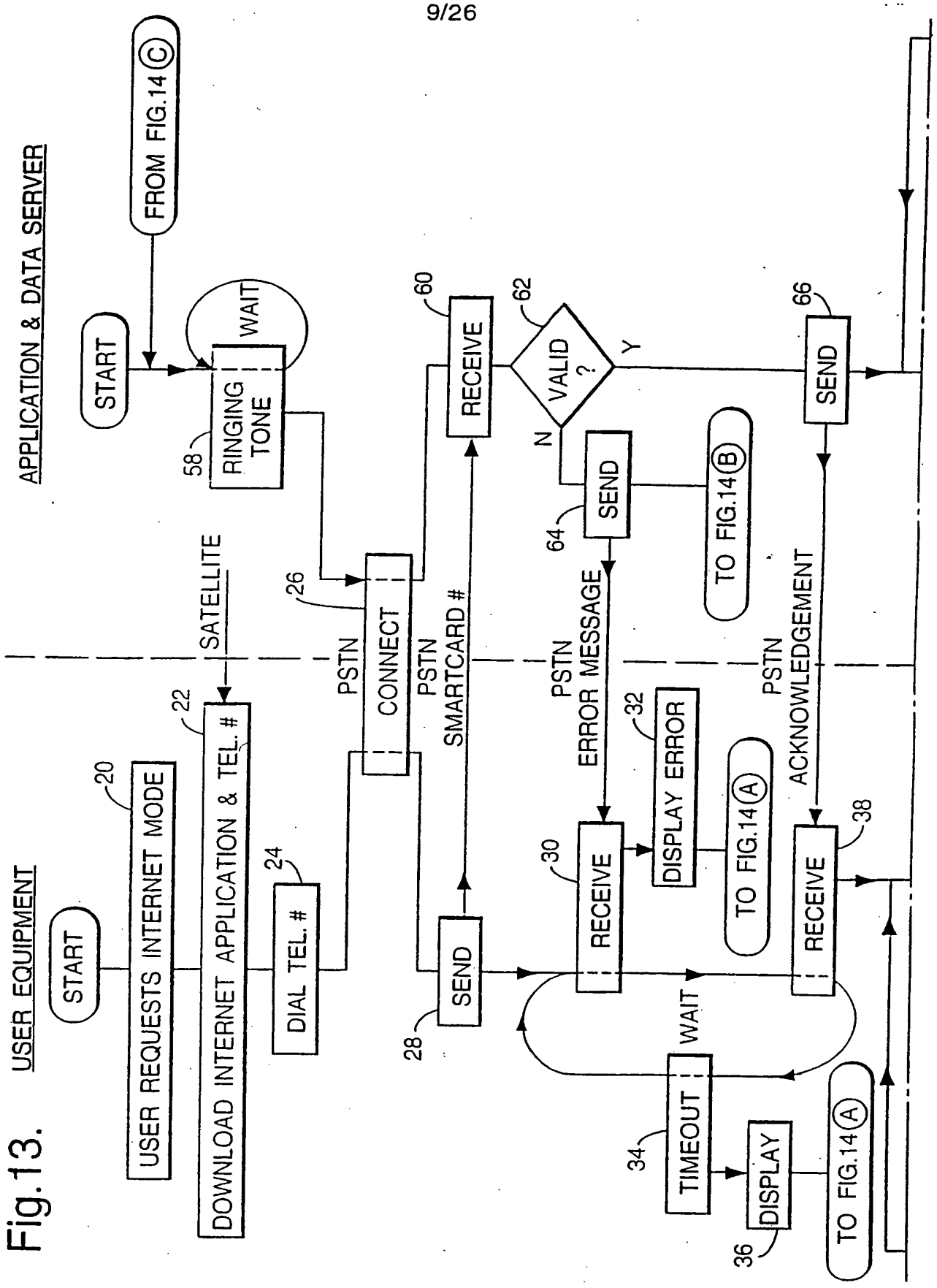

USER EQUIPMENT
APPLICATION & DATA SERVER
START
USER REQUESTS INTERNET MODE
20
DOWNLOAD INTERNET APPLICATION & TEL. #
22
DIAL TEL. #
24
SATELLITE
PSTN
CONNECT
26
PSTN
SMARTCARD #
SEND
28
RECEIVE
30
PSTN
ERROR MESSAGE
DISPLAY ERROR
32
TIMEOUT
34
DISPLAY
36
WAIT
PSTN
ACKNOWLEDGEMENT
RECEIVE
38
START
FROM FIG.14 C
WAIT
RINGING TONE
58
RECEIVE
60
VALID ?
62
N
Y
SEND
64
TO FIG.14 B
SEND
66
TO FIG.14 A
TO FIG.14 A

Fig.13 (Cont).

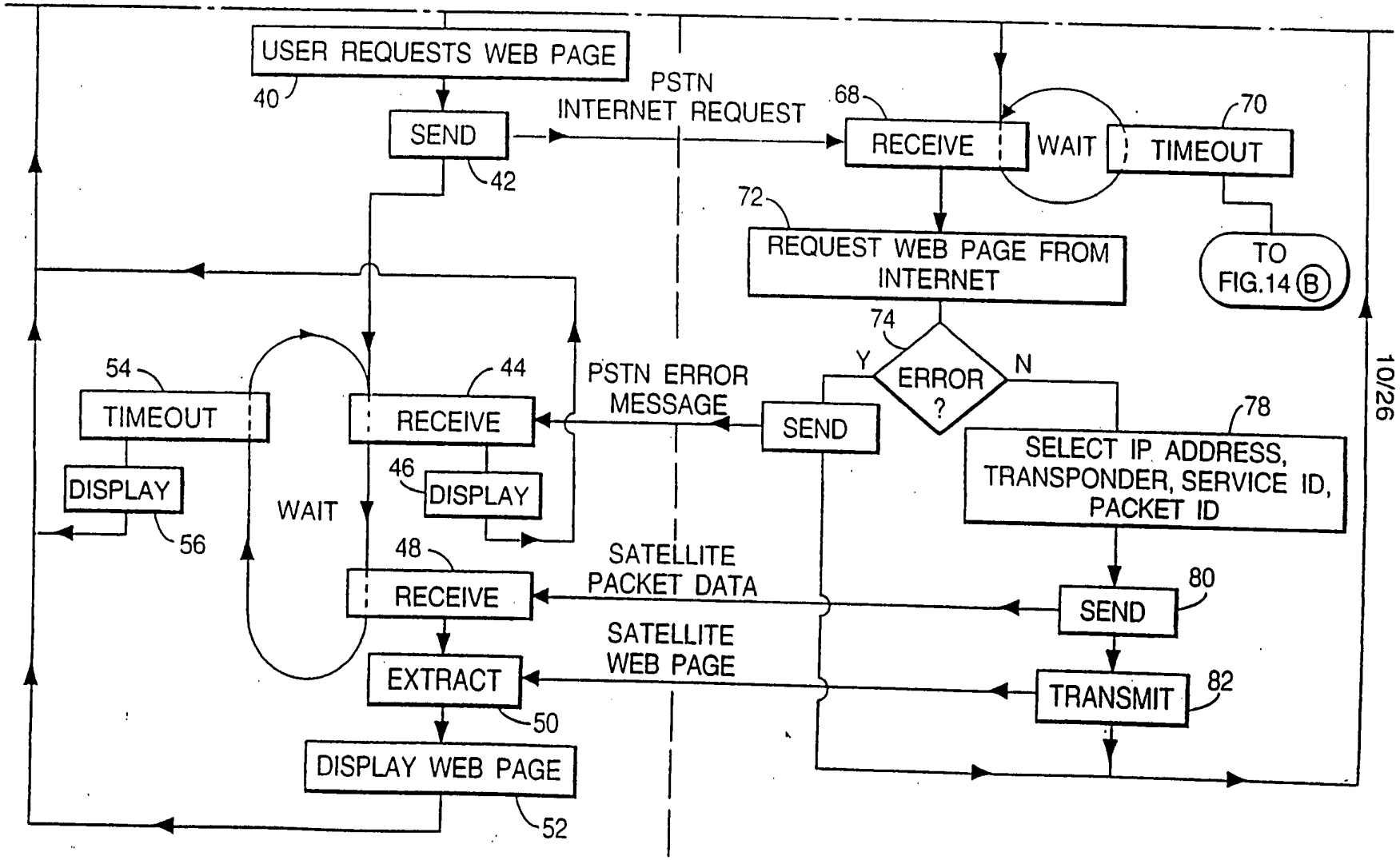

USER REQUESTS WEB PAGE
40
SEND
42
PSTN
INTERNET REQUEST
68
RECEIVE
WAIT
70
TIMEOUT
72
REQUEST WEB PAGE FROM INTERNET
TO FIG.14 (B)
74
ERROR ?
Y
N
PSTN ERROR MESSAGE
SEND
78
SELECT IP ADDRESS, TRANSPONDER, SERVICE ID, PACKET ID
54
TIMEOUT
44
RECEIVE
DISPLAY
56
46
DISPLAY
WAIT
48
RECEIVE
SATELLITE PACKET DATA
80
SEND
SATELLITE WEB PAGE
EXTRACT
50
TRANSMIT
82
DISPLAY WEB PAGE
52
10/26

Fig.14.

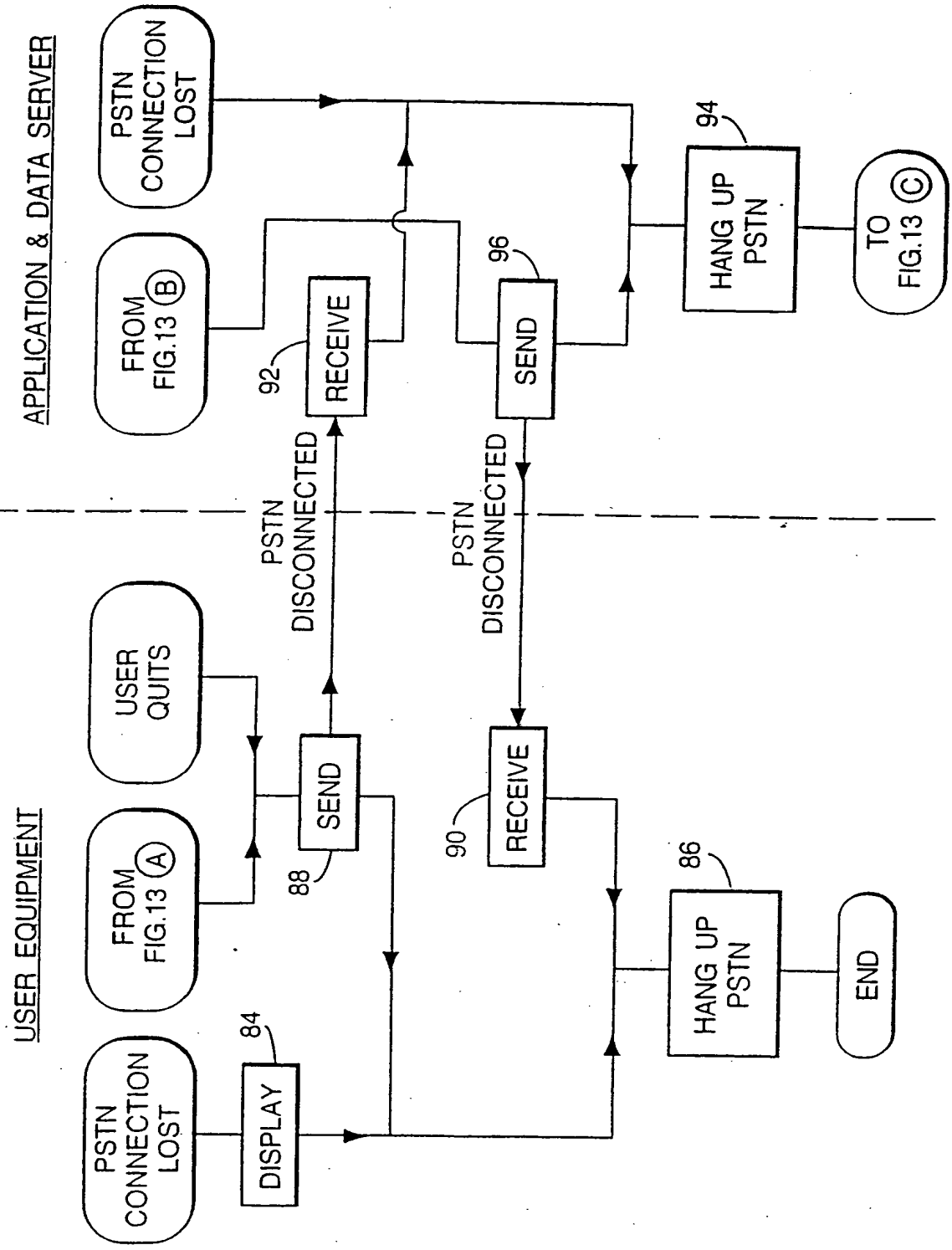

APPLICATION & DATA SERVER
USER EQUIPMENT
PSTN CONNECTION LOST
FROM FIG.13 (B)
RECEIVE
92
SEND
96
HANG UP PSTN
94
TO FIG.13 (C)
PSTN DISCONNECTED
PSTN DISCONNECTED
USER QUITS
FROM FIG.13 (A)
SEND
88
RECEIVE
90
HANG UP PSTN
86
PSTN CONNECTION LOST
DISPLAY
84
END

Fig.15.

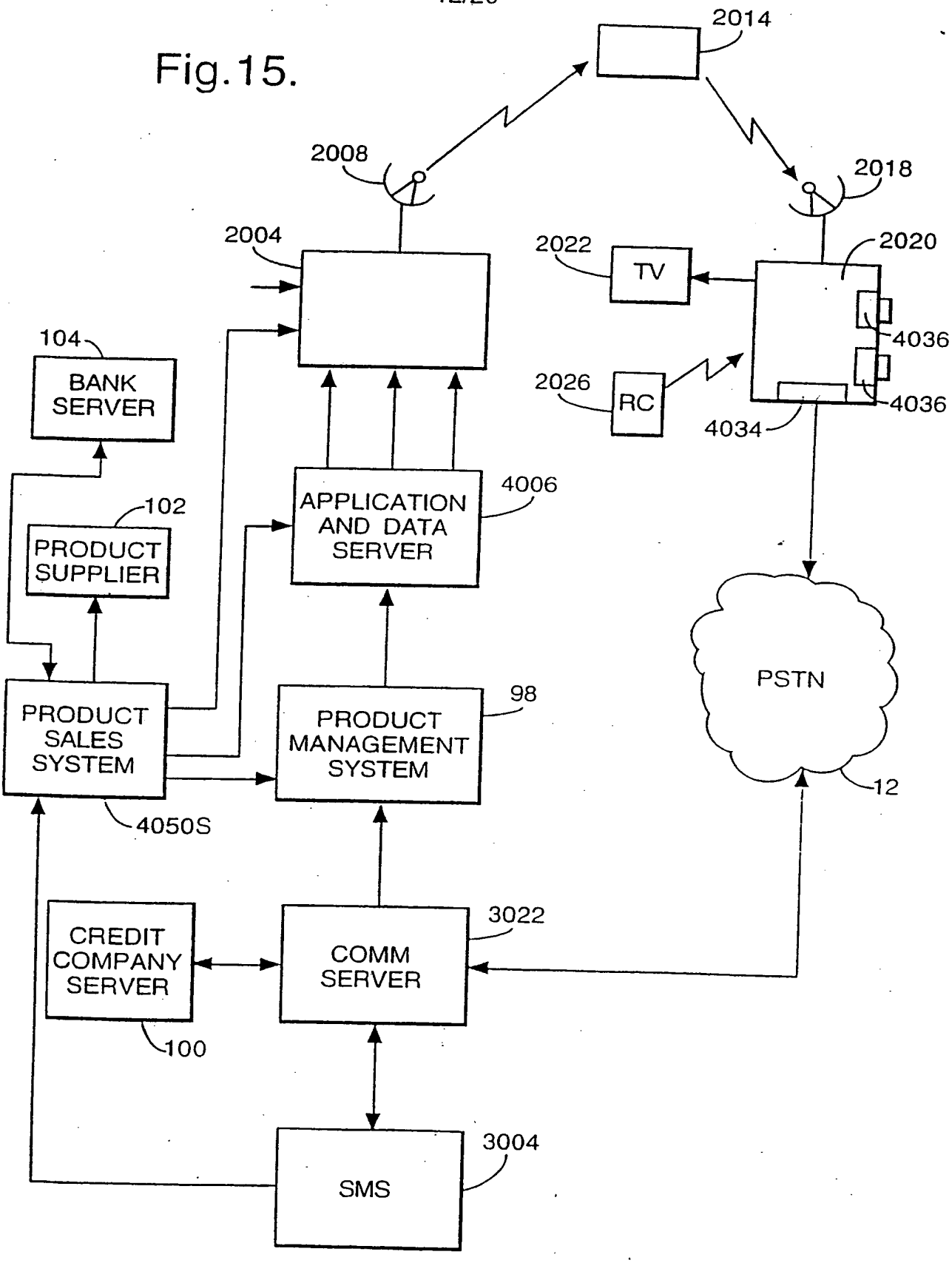

2014
2008
2018
2004
2022
TV
2020
104
BANK SERVER
4036
2026
RC
4036
4034
4006
APPLICATION AND DATA SERVER
102
PRODUCT SUPPLIER
PSTN
PRODUCT SALES SYSTEM
98
PRODUCT MANAGEMENT SYSTEM
12
4050S
CREDIT COMPANY SERVER
3022
COMM SERVER
100
3004
SMS

Fig.16.

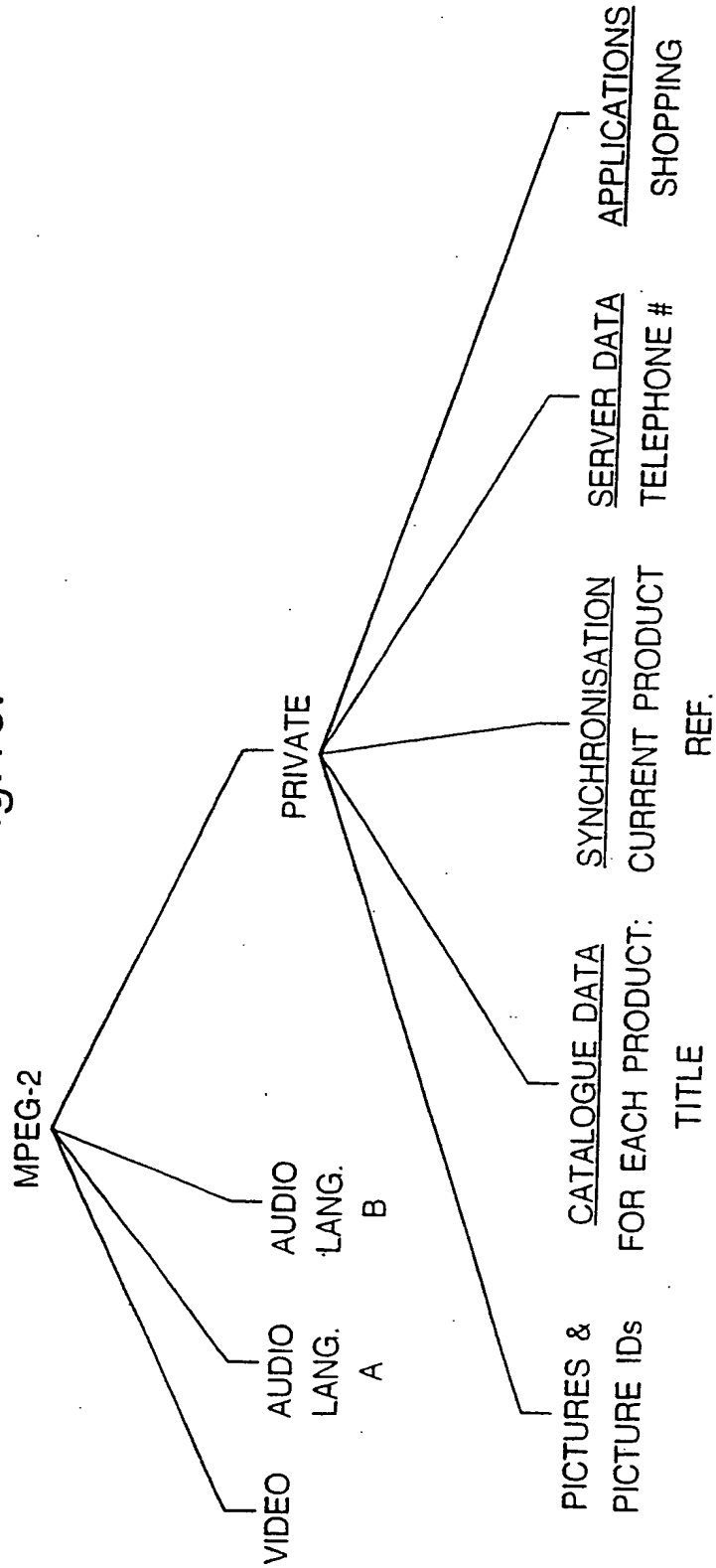

MPEG-2
VIDEO
AUDIO LANG. A
AUDIO LANG. B
PICTURES & PICTURE IDs
PRIVATE
CATALOGUE DATA
FOR EACH PRODUCT:
TITLE
DESCRIPTION
PRODUCT REF.
PRICE
PICTURE ID
SYNCHRONISATION
CURRENT PRODUCT REF.
SERVER DATA
TELEPHONE #
APPLICATIONS
SHOPPING

Fig.17.

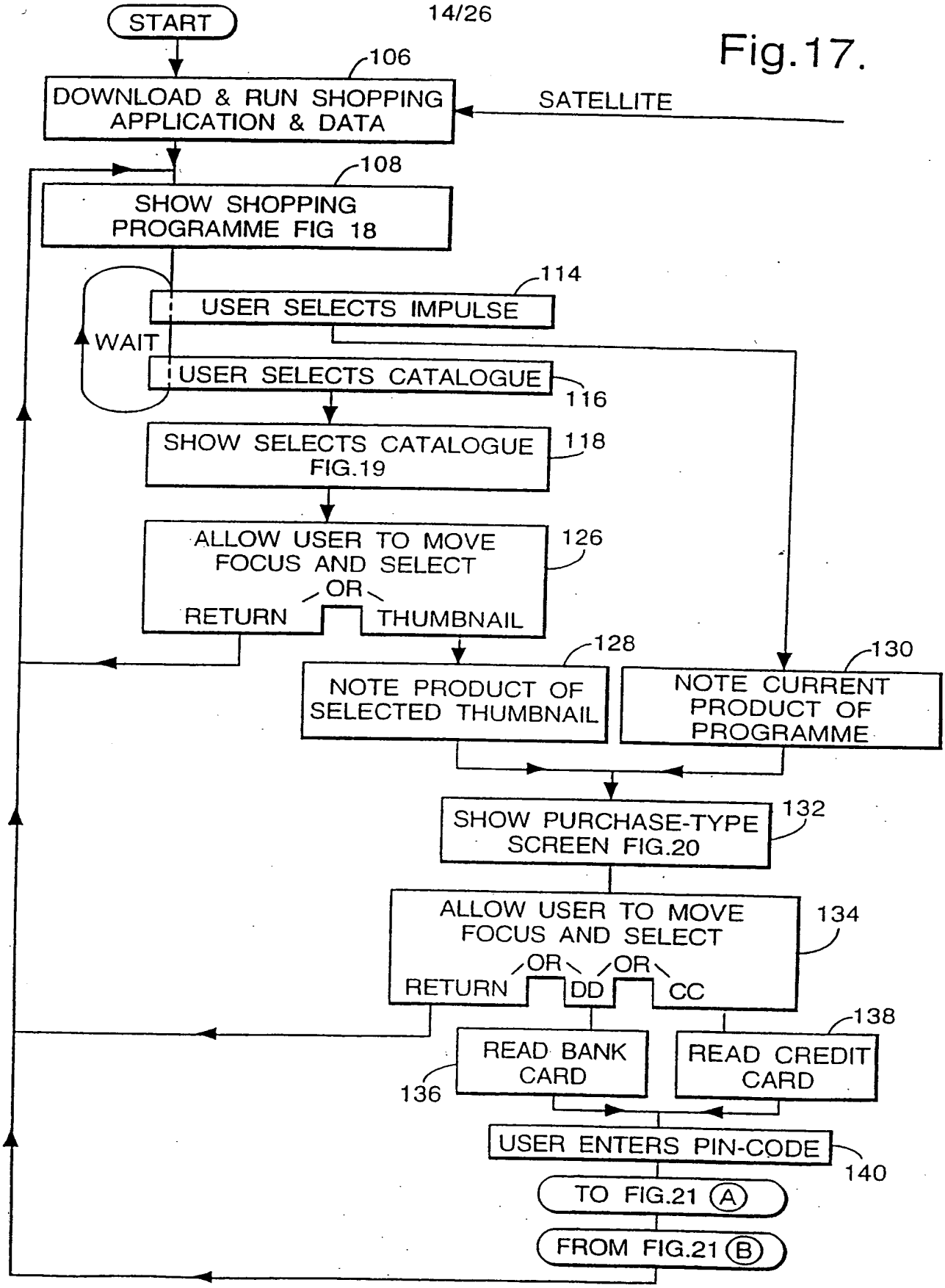

START
106
DOWNLOAD & RUN SHOPPING APPLICATION & DATA
SATELLITE
108
SHOW SHOPPING PROGRAMME FIG 18
114
USER SELECTS IMPULSE
WAIT
USER SELECTS CATALOGUE
116
SHOW SELECTS CATALOGUE FIG.19
118
ALLOW USER TO MOVE FOCUS AND SELECT
OR
RETURN
THUMBNAIL
126
128
NOTE PRODUCT OF SELECTED THUMBNAIL
130
NOTE CURRENT PRODUCT OF PROGRAMME
SHOW PURCHASE-TYPE SCREEN FIG.20
132
ALLOW USER TO MOVE FOCUS AND SELECT
OR
OR
RETURN
DD
CC
134
138
READ BANK CARD
136
READ CREDIT CARD
USER ENTERS PIN-CODE
140
TO FIG.21 (A)
FROM FIG.21 (B)

Fig.18.

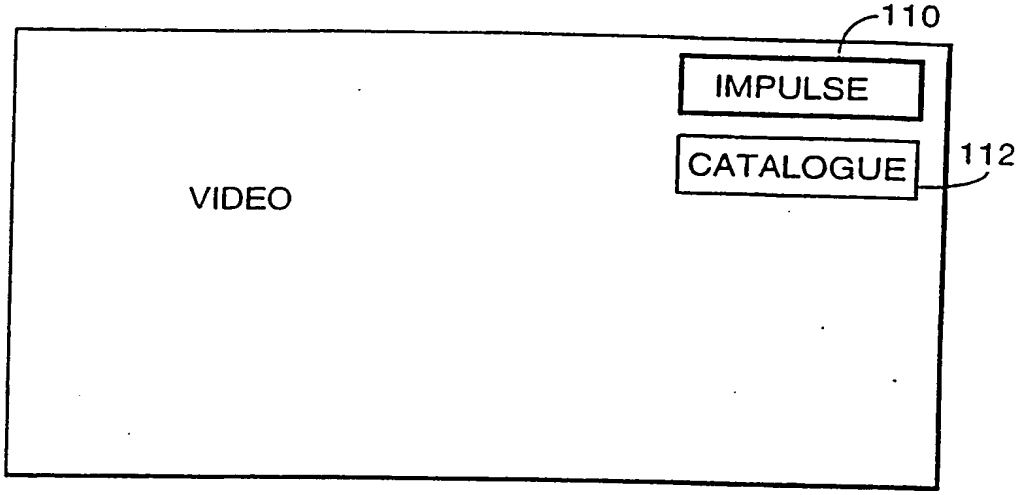


Fig.19.

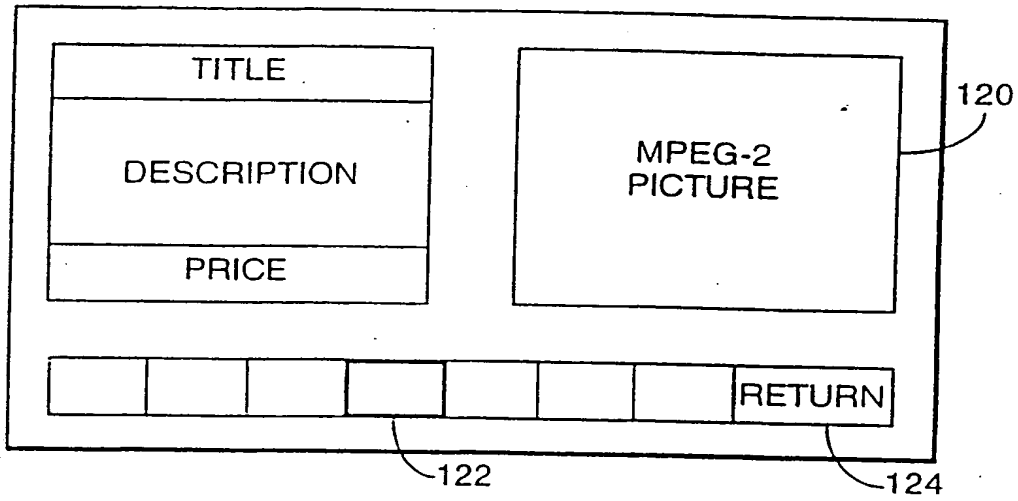
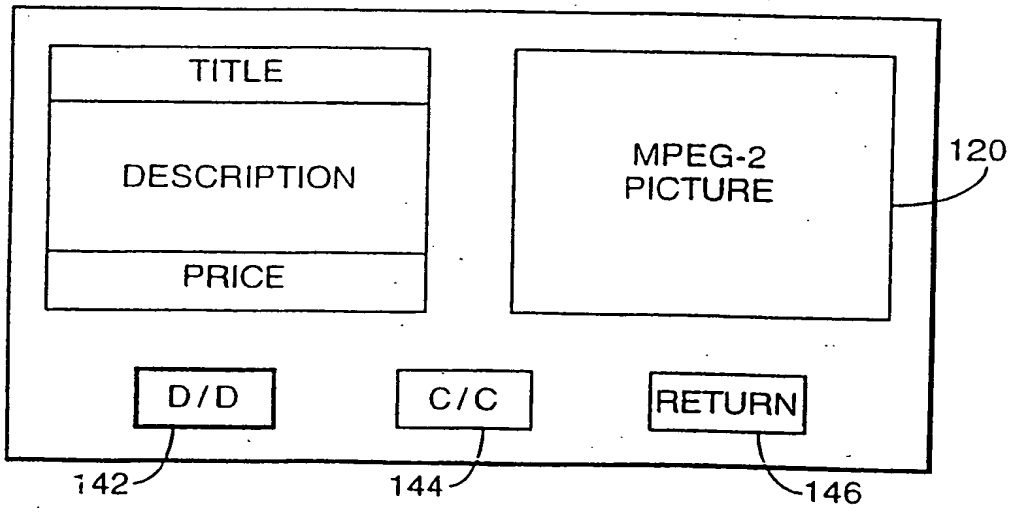


Fig.20.



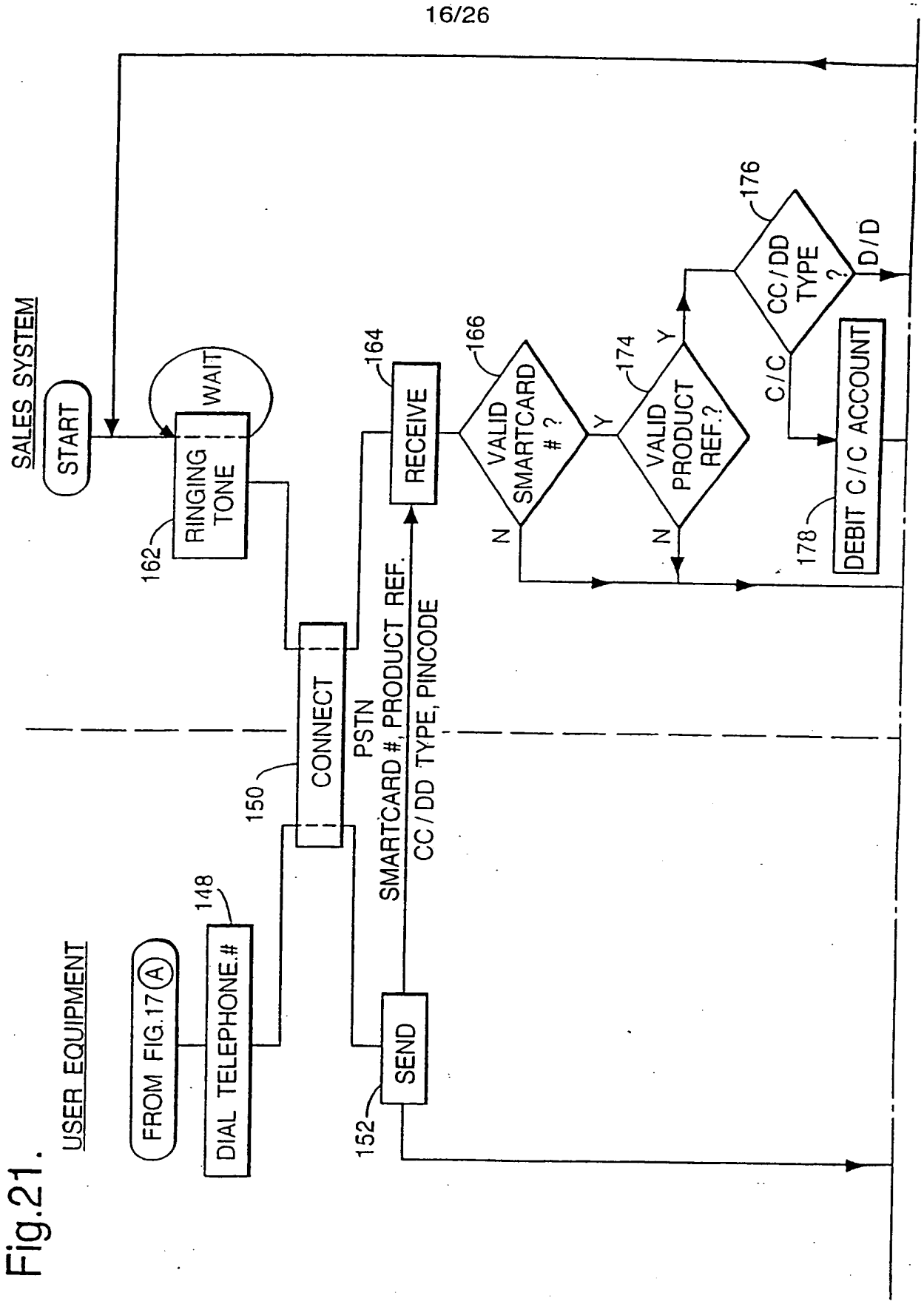

SALES SYSTEM
START
WAIT
RINGING TONE
162
RECEIVE
164
VALID SMARTCARD # ?
166
N
Y
VALID PRODUCT REF.?
174
N
Y
CC/DD TYPE ?
176
C/C
D/D
DEBIT C/C ACCOUNT
178
CONNECT
150
PSTN
SMARTCARD #, PRODUCT REF.
CC/DD TYPE, PINCODE
USER EQUIPMENT
FROM FIG.17 (A)
DIAL TELEPHONE.#
148
SEND
152

Fig.21.

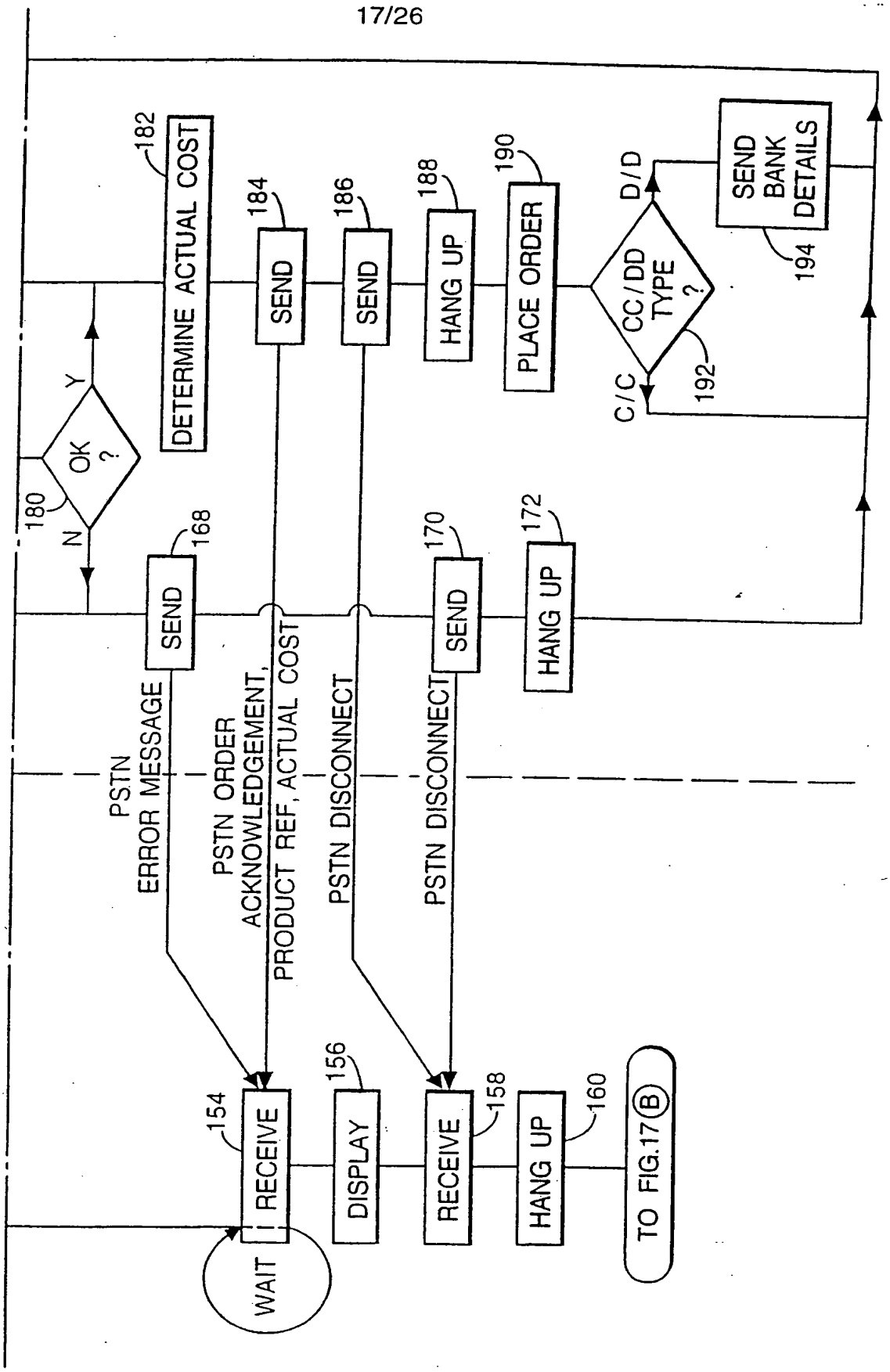

WAIT
RECEIVE
154
DISPLAY
156
RECEIVE
158
HANG UP
160
TO FIG.17 (B)
PSTN ERROR MESSAGE
PSTN ORDER ACKNOWLEDGEMENT, PRODUCT REF, ACTUAL COST
PSTN DISCONNECT
PSTN DISCONNECT
SEND
168
SEND
170
HANG UP
172
OK ?
180
Y
N
DETERMINE ACTUAL COST
182
SEND
184
SEND
186
HANG UP
188
PLACE ORDER
190
CC/DD TYPE ?
192
D/D
C/C
SEND BANK DETAILS
194

Fig.21 (Cont).

Fig.22.

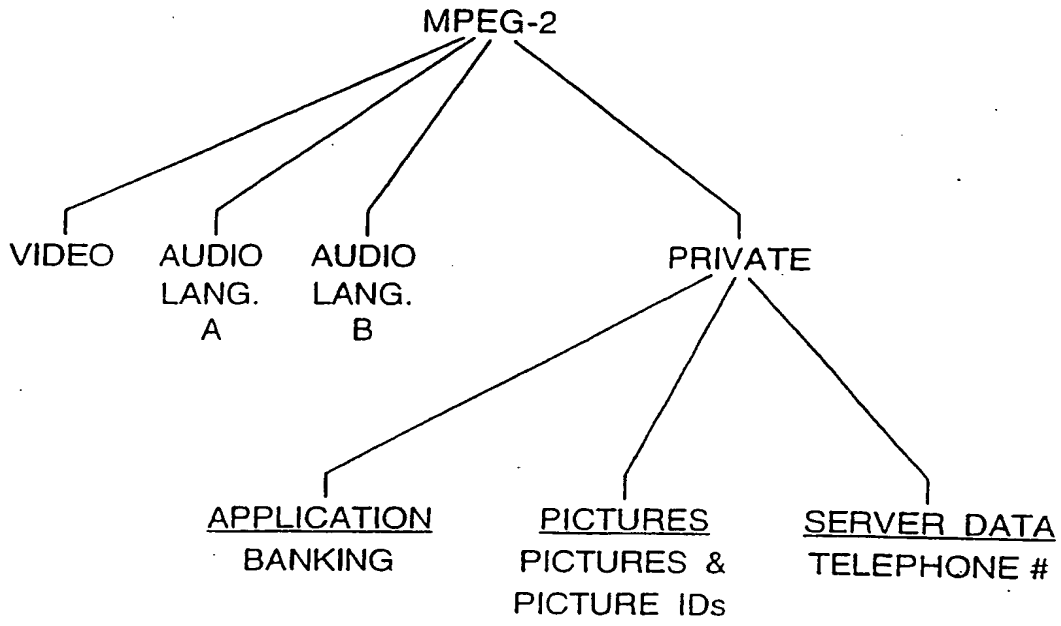

MPEG-2
VIDEO
AUDIO LANG. A
AUDIO LANG. B
PRIVATE
APPLICATION
BANKING
PICTURES
PICTURES & PICTURE IDs
SERVER DATA
TELEPHONE #

Fig.26.

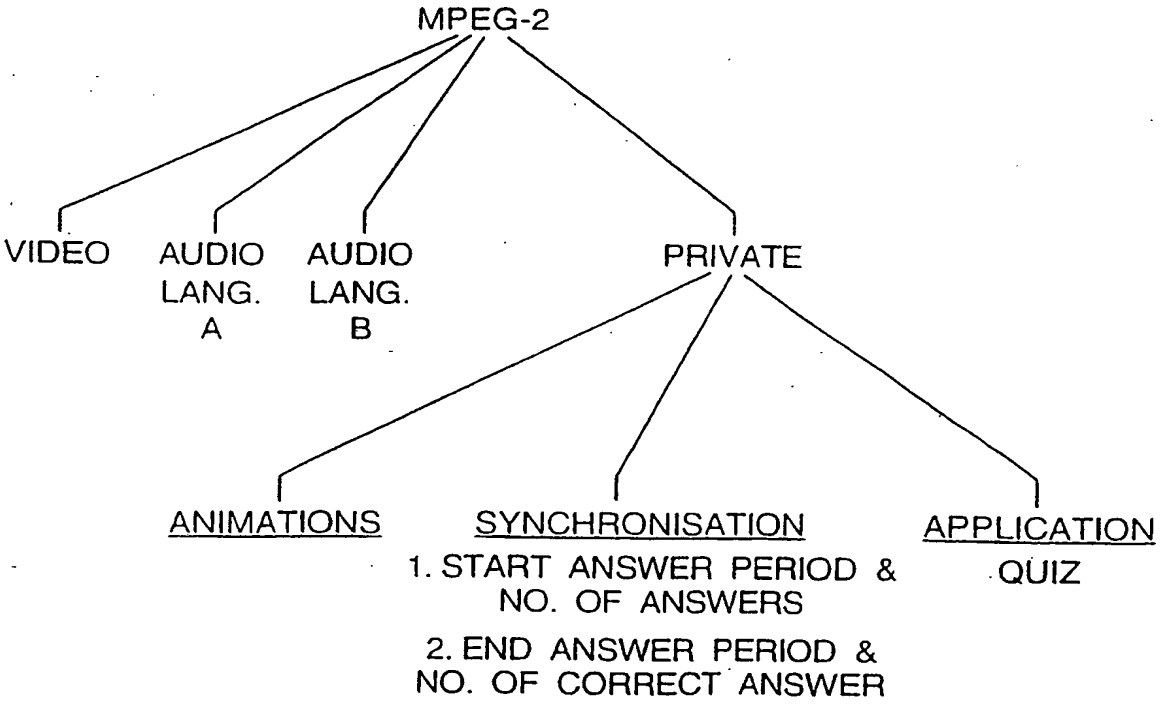

MPEG-2
VIDEO
AUDIO LANG. A
AUDIO LANG. B
PRIVATE
ANIMATIONS
SYNCHRONISATION
1. START ANSWER PERIOD & NO. OF ANSWERS
2. END ANSWER PERIOD & NO. OF CORRECT ANSWER
APPLICATION
QUIZ

Fig.23.

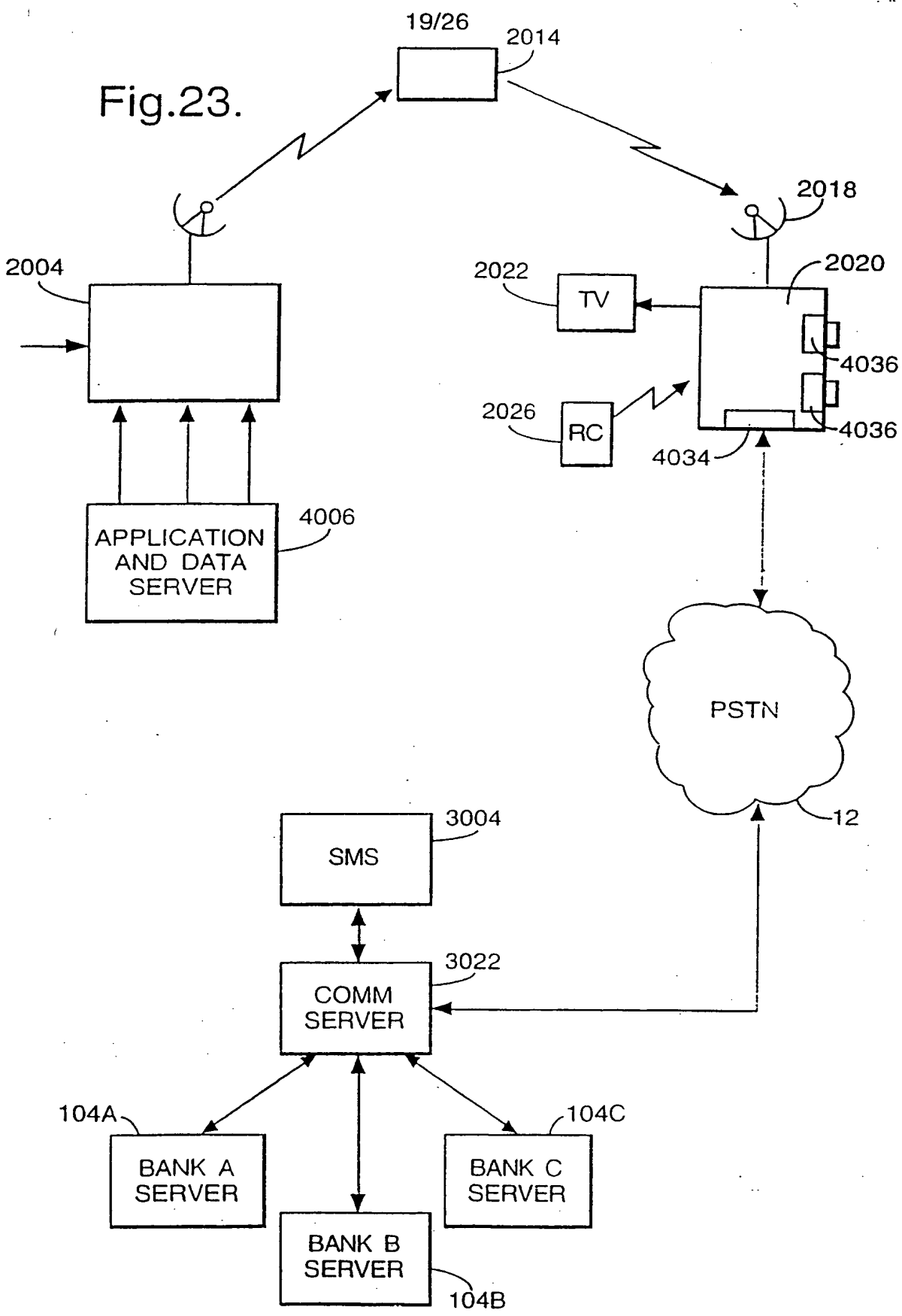
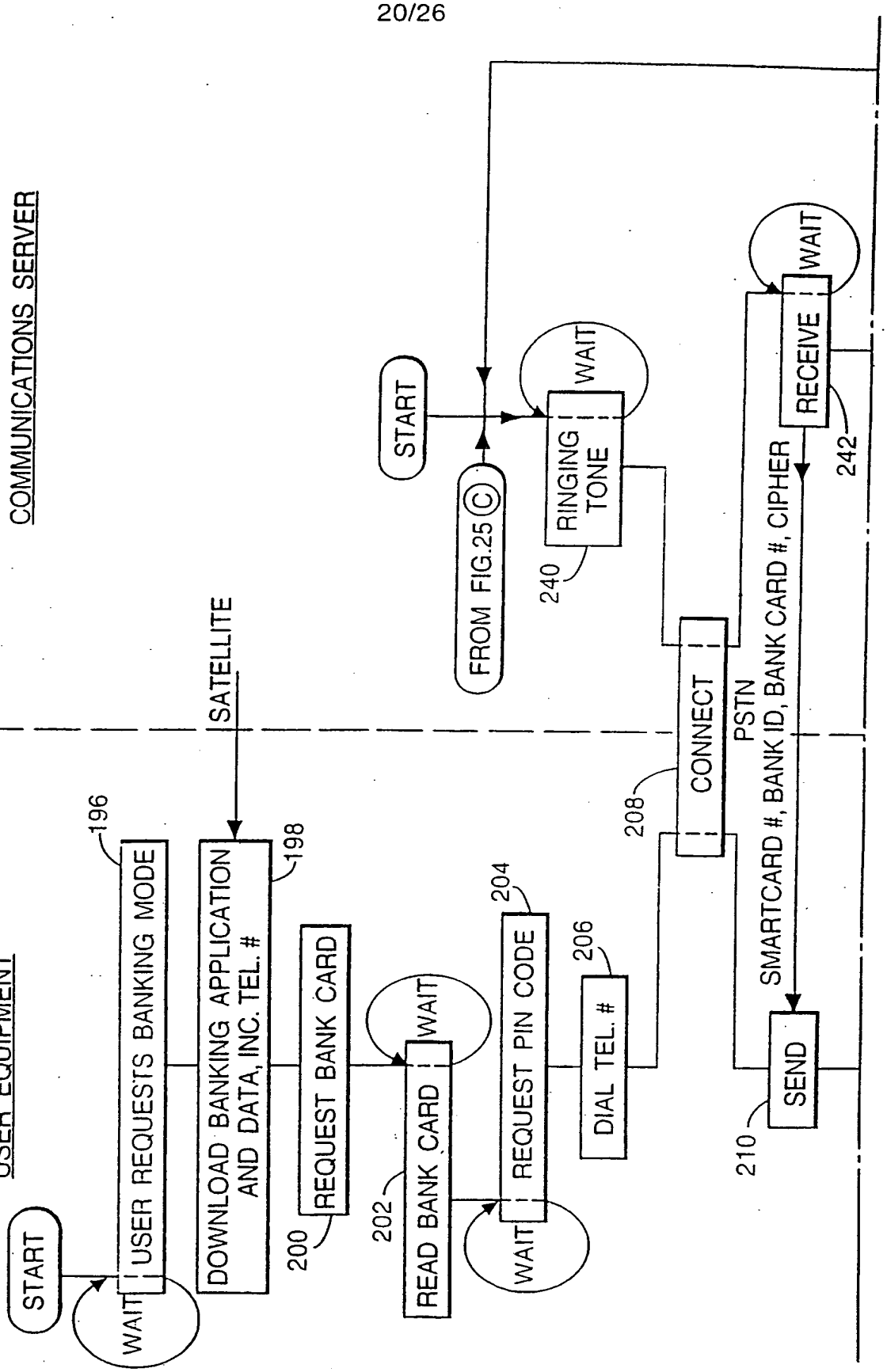

19/26
2014
2018
2004
2022
TV
2020
4036
4036
2026
RC
4034
APPLICATION AND DATA SERVER
4006
PSTN
12
SMS
3004
3022
COMM SERVER
104A
BANK A SERVER
104C
BANK C SERVER
BANK B SERVER
104B

Fig.24.


USER EQUIPMENT
COMMUNICATIONS SERVER
START
WAIT
USER REQUESTS BANKING MODE
196
SATELLITE
DOWNLOAD BANKING APPLICATION AND DATA, INC. TEL. #
198
REQUEST BANK CARD
200
WAIT
READ BANK CARD
202
WAIT
REQUEST PIN CODE
204
DIAL TEL. #
206
CONNECT
208
PSTN
SMARTCARD #, BANK ID, BANK CARD #, CIPHER
SEND
210
START
FROM FIG.25 Ⓒ
WAIT
RINGING TONE
240
RECEIVE
242
WAIT

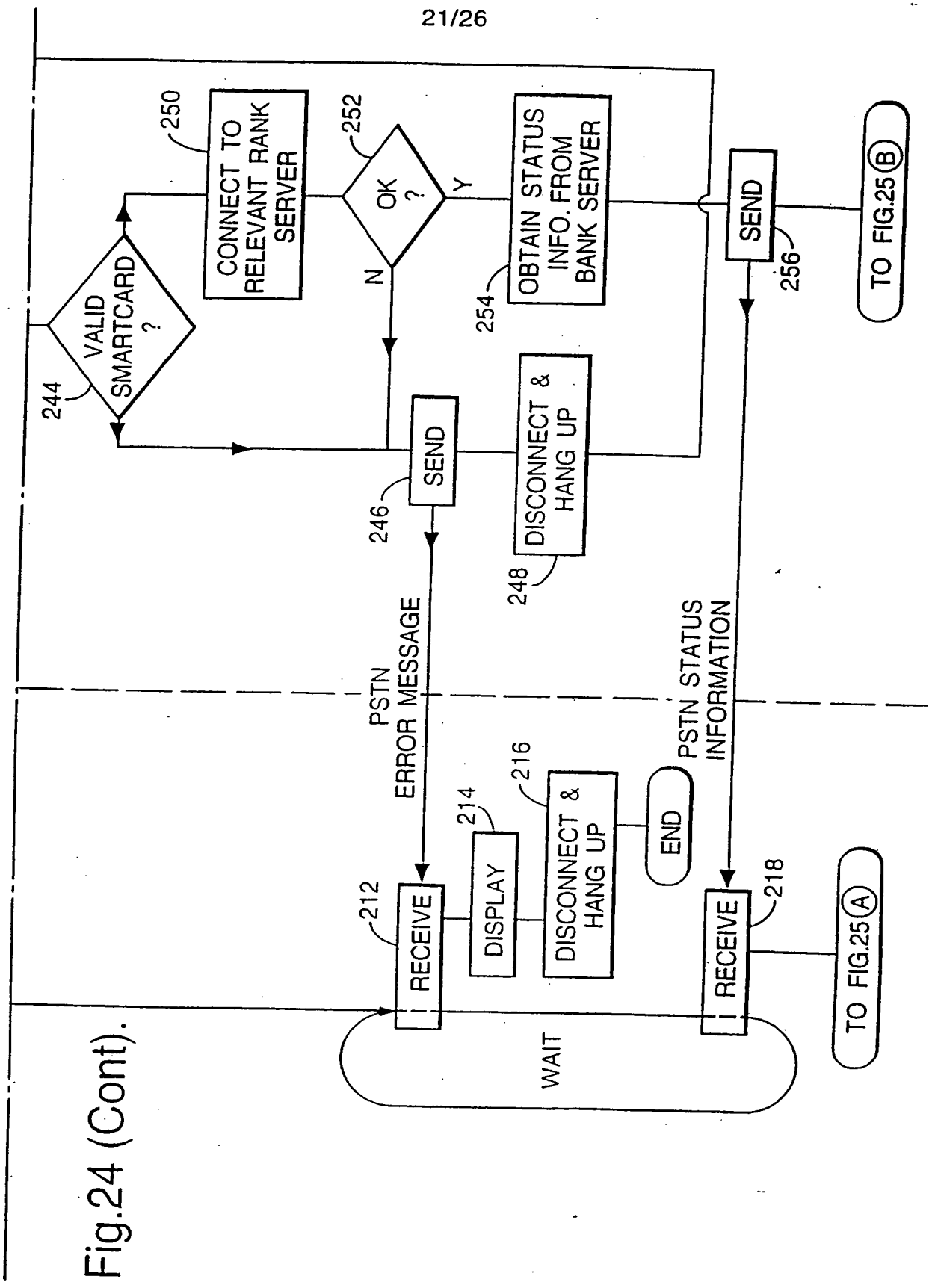

VALID SMARTCARD ?
244
CONNECT TO RELEVANT RANK SERVER
250
OK ?
252
Y
N
OBTAIN STATUS INFO. FROM BANK SERVER
254
SEND
256
TO FIG.25 (B)
SEND
246
DISCONNECT & HANG UP
248
PSTN ERROR MESSAGE
PSTN STATUS INFORMATION
RECEIVE
212
DISPLAY
214
DISCONNECT & HANG UP
216
END
RECEIVE
218
TO FIG.25 (A)
WAIT

Fig.24 (Cont).

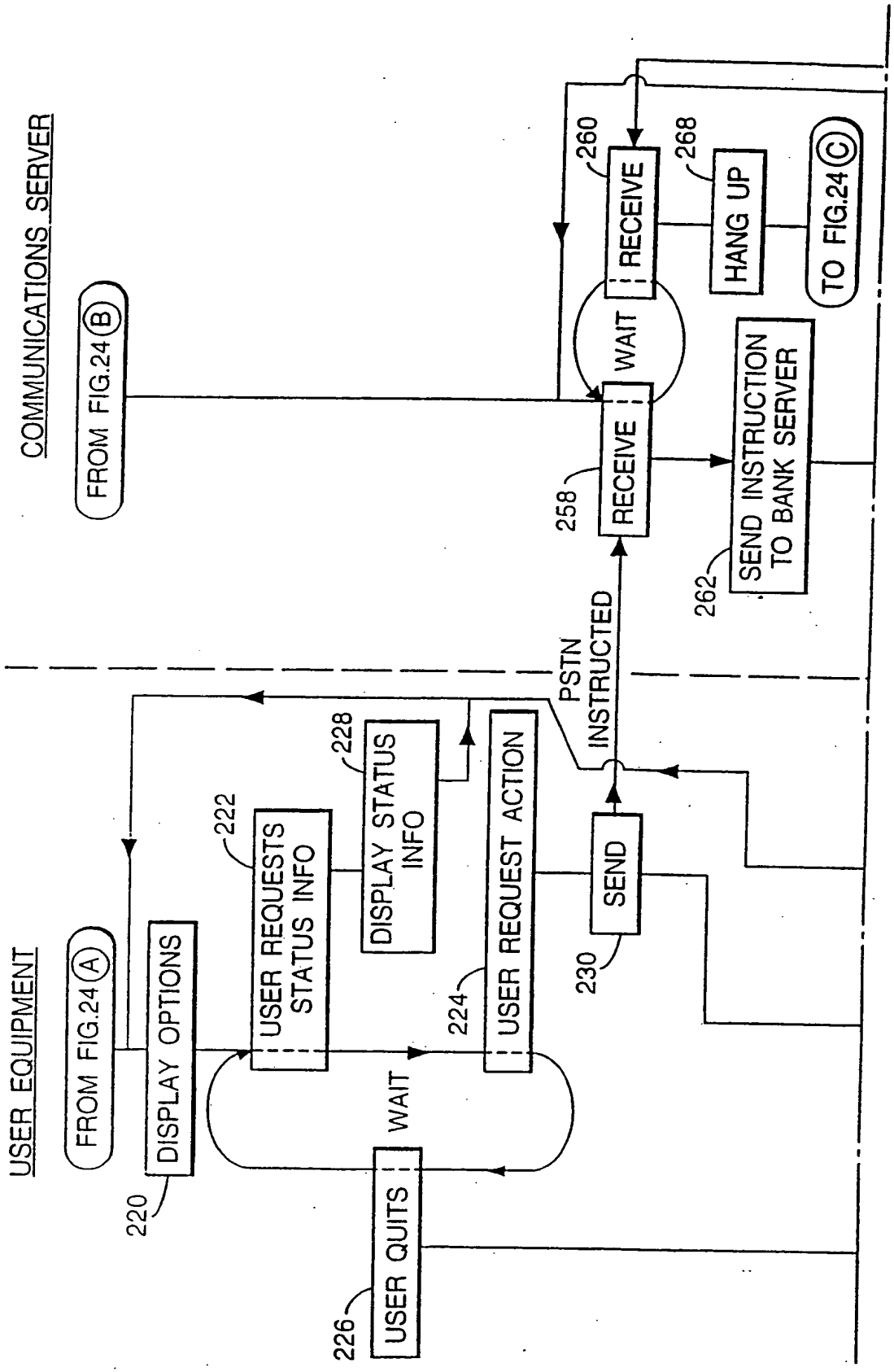

USER EQUIPMENT
COMMUNICATIONS SERVER
FROM FIG.24 (A)
FROM FIG.24 (B)
DISPLAY OPTIONS
220
USER REQUESTS STATUS INFO
222
DISPLAY STATUS INFO
228
USER REQUEST ACTION
224
SEND
230
WAIT
USER QUITS
226
PSTN INSTRUCTED
RECEIVE
258
SEND INSTRUCTION TO BANK SERVER
262
WAIT
RECEIVE
260
HANG UP
268
TO FIG.24 (C)

Fig.25.

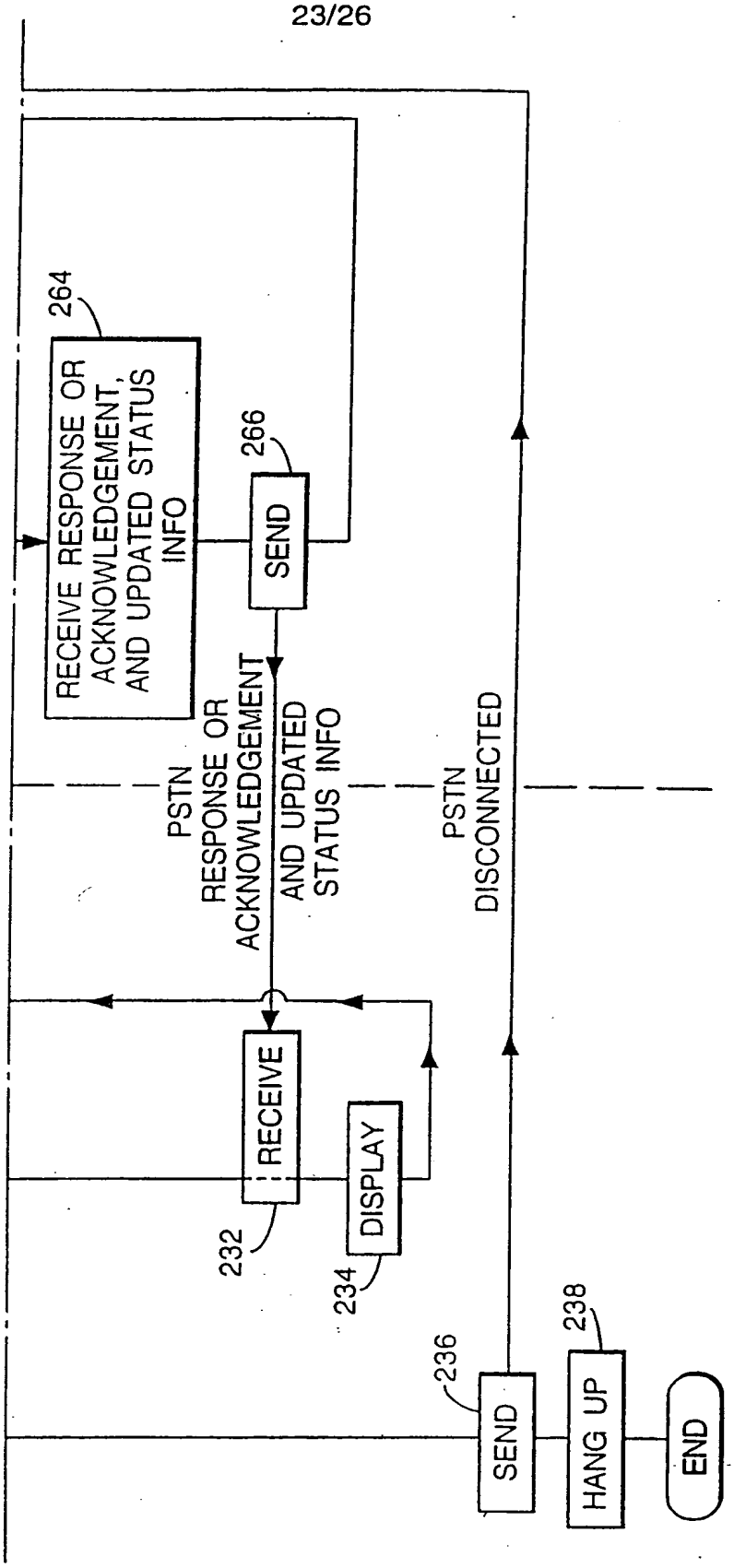

264
RECEIVE RESPONSE OR ACKNOWLEDGEMENT, AND UPDATED STATUS INFO
266
SEND
PSTN RESPONSE OR ACKNOWLEDGEMENT AND UPDATED STATUS INFO
PSTN DISCONNECTED
RECEIVE
232
DISPLAY
234
236
SEND
238
HANG UP
END

Fig.25 (Cont).

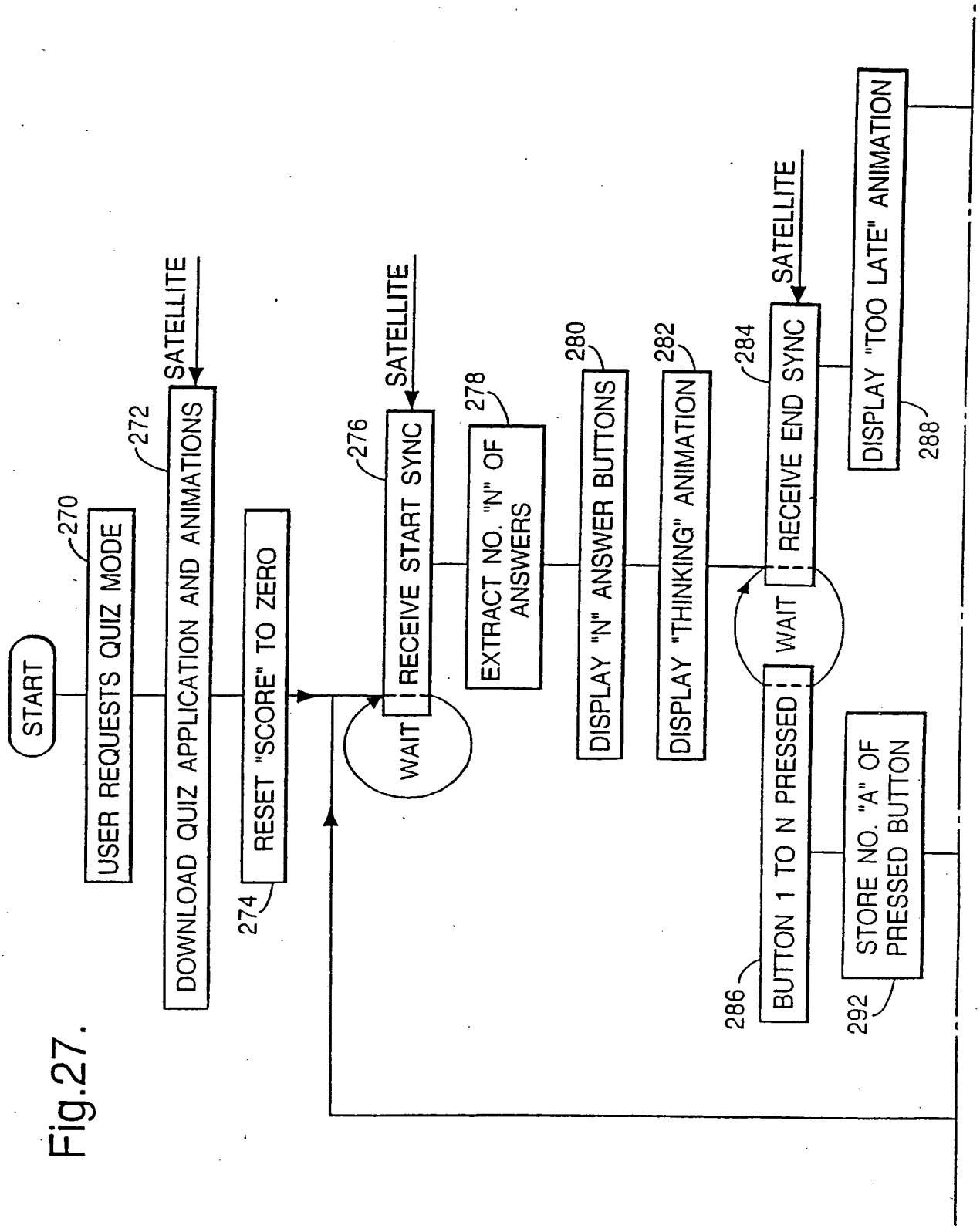

START
USER REQUESTS QUIZ MODE
270
DOWNLOAD QUIZ APPLICATION AND ANIMATIONS
272
SATELLITE
RESET "SCORE" TO ZERO
274
RECEIVE START SYNC
276
SATELLITE
WAIT
EXTRACT NO. "N" OF ANSWERS
278
DISPLAY "N" ANSWER BUTTONS
280
DISPLAY "THINKING" ANIMATION
282
RECEIVE END SYNC
284
SATELLITE
WAIT
BUTTON 1 TO N PRESSED
286
STORE NO. "A" OF PRESSED BUTTON
292
DISPLAY "TOO LATE" ANIMATION
288

Fig.27.

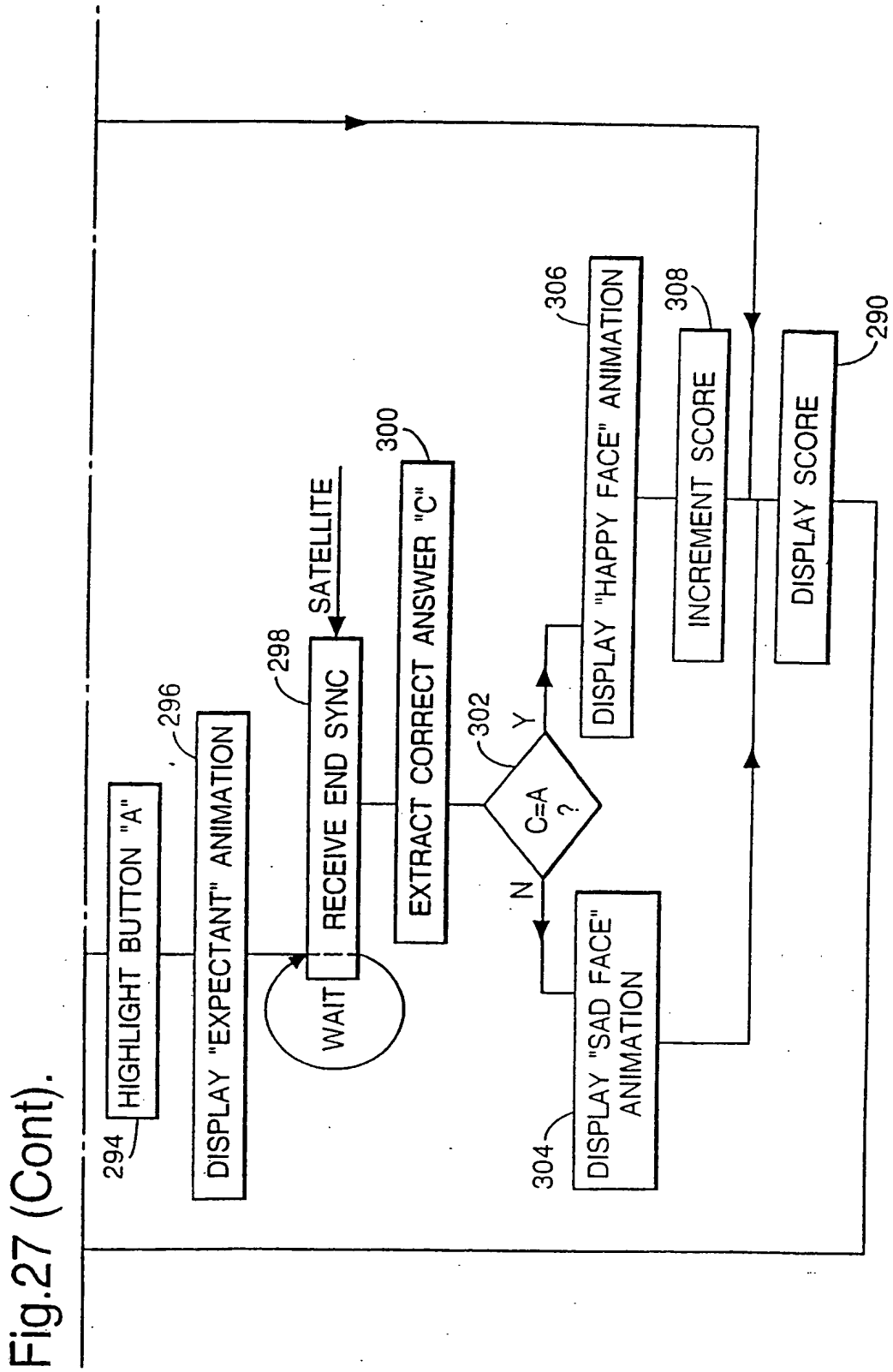
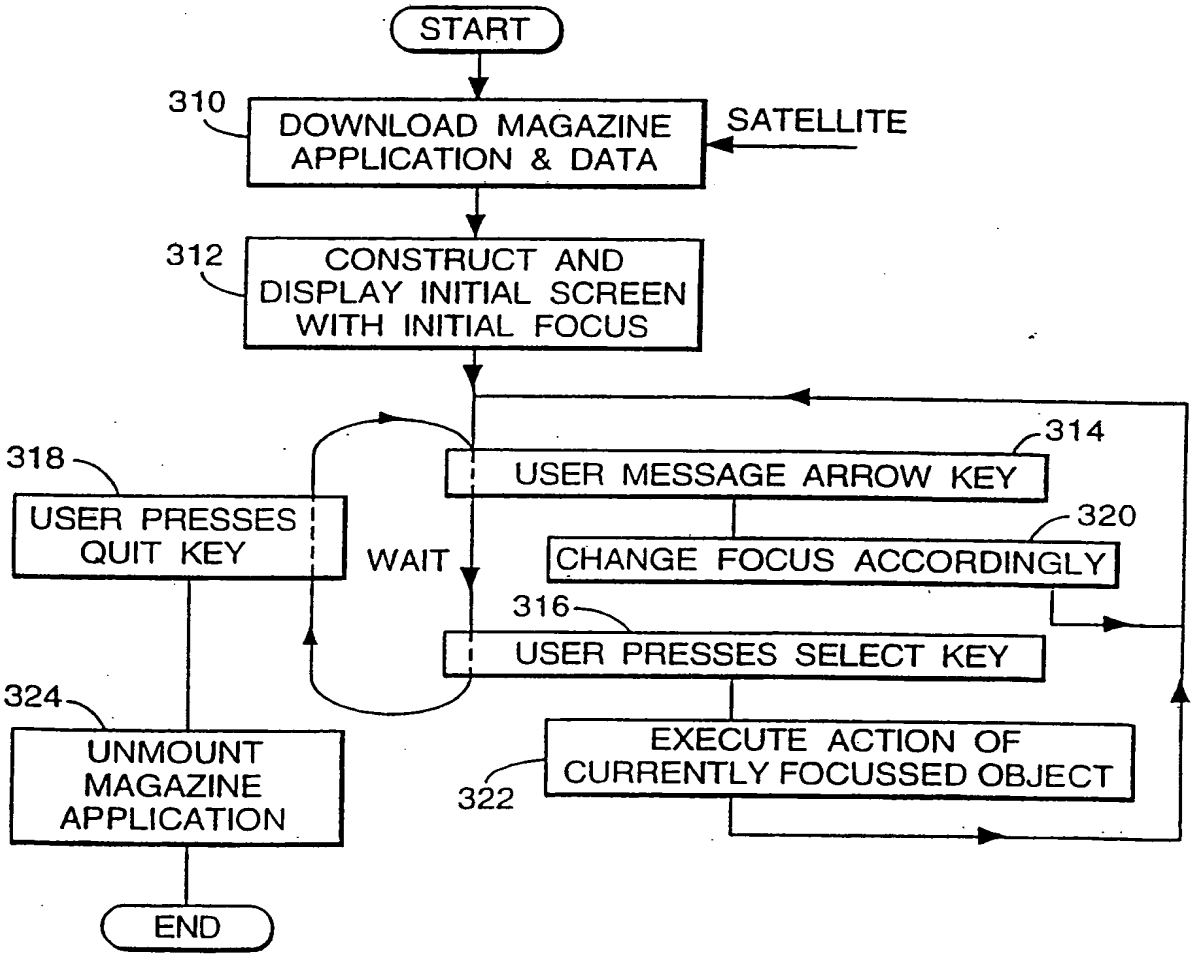

HIGHLIGHT BUTTON "A"
294
DISPLAY "EXPECTANT" ANIMATION
296
RECEIVE END SYNC
298
SATELLITE
WAIT
EXTRACT CORRECT ANSWER "C"
300
C=A ?
302
Y
N
DISPLAY "HAPPY FACE" ANIMATION
306
DISPLAY "SAD FACE" ANIMATION
304
INCREMENT SCORE
308
DISPLAY SCORE
290

Fig.27 (Cont).

Fig.28.


START
310
DOWNLOAD MAGAZINE APPLICATION & DATA
SATELLITE
312
CONSTRUCT AND DISPLAY INITIAL SCREEN WITH INITIAL FOCUS
314
USER MESSAGE ARROW KEY
320
CHANGE FOCUS ACCORDINGLY
316
USER PRESSES SELECT KEY
322
EXECUTE ACTION OF CURRENTLY FOCUSSED OBJECT
318
USER PRESSES QUIT KEY
WAIT
324
UNMOUNT MAGAZINE APPLICATION
END